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(12) United States Patent

(10) Patent No.:

US 6,558,708 B1

(45) Date of Patent:

May 6, 2003

METHODS FOR MANIPULATING UPPER GASTROINTESTINAL TRANSIT, BLOOD FLOW, AND SATIETY, AND FOR TREATING VISCERAL HYPERALGESIA

Inventor: Henry C. Lin, Manhattan Beach, CA

Assignee: Cedars-Sinai Medical Center, Los

Angeles, CA (US)

Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/546,119

Apr. 10, 2000 (22)Filed:

Related U.S. Application Data

Continuation-in-part of application No. 09/420,046, filed on, Oct. 18, 1999, which is a continuation-in-part of application No. 09/359,583, filed on Jul. 22, 1999, now abandoned; which is a continuation of application No. 08/832,307, filed on Apr. 3, 1997, now Pat. No. 5,977,175, which is a continuation of application No. 08/442,843, filed on May 17, 1995, now abandoned.

Int. Cl.⁷ A61K 9/16; A61K 9/20; A61K 9/14; A61K 9/48

U.S. Cl. 424/490; 424/451; 424/464; 424/474; 424/489

Field of Search 424/451, 463, 424/464, 474, 489, 490, 491; 514/12, 13

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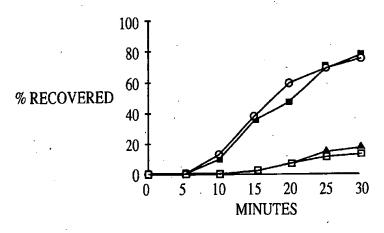
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Primary Examiner-Thurman K. Page Assistant Examiner-S. Tran (74) Attorney, Agent, or Firm-Sidley Austin Brown & Wood LLP

ABSTRACT

Disclosed are a method of manipulating the rate of upper gastrointestinal transit of a substance in a mammal. Also disclosed are methods of manipulating satiety and postprandial visceral blood flow. A method of treating visceral pain or visceral hypersensitivity in a human subject is also described. A method for prolonging the residence time of an orally or enterally administered substance by promoting its dissolution, bioavailability and/or absorption in the small intestine is also described. These methods are related to a method of transmitting to and replicating at a second location in the central nervous system a serotonergic neural signal originating at a first location in the proximal or distal gut of a mammal and/or a method of transmitting to and replicating at a second location in the upper gastrointestinal tract a serotonergic neural signal originating at a first location in the proximal or distal gut.

13 Claims, 6 Drawing Sheets



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